1.   A graphical user interface (GUI) which comprises a display showing an operational history of a thread for use in a microengine of a processor.

2.   The GUI of claim 1, wherein the operational history comprises states of execution of the thread as a function of time.

3.   The GUI of claim 2, wherein different states of execution of the thread are displayed as different colors.

4.   The GUI of claim 3, wherein the different states comprise a first state in which the thread is executing, a second state in which the thread has been aborted, and a third state in which the thread is stalled.

5.   The GUI of claim 1, which also displays operational states associated with the microengine.

6.   The GUI of claim 5, wherein the operational states associated with the microengine comprise a first state in which the microengine is idle, and a second state in which the microengine is disabled.

7.   The GUI of claim 1, further comprising event indicators that show reference events that relate to the thread as a function of time.

8.   The GUI of claim 7, wherein the event indicators comprise one or more of the following: a first indicator which indicates that the thread has issued a reference to a device, a second indicator which indicates that the reference has been queued by the device, a third indicator

which indicates that the reference has been removed from a
queue by the device for processing, a fourth indicator which
indicates that processing is done, a fifth indicator which
indicates that a signal has been issued to the thread that
5   processing is done, and a sixth indicator which indicates
that the signal has been consumed by the thread.

9.   The GUI of claim 7, wherein:
the reference events relate to a device in
communication with the thread; and
10   the GUI further comprises an identifier which
identifies the device to which the reference events relate.

10.   The GUI of claim 1, further comprising a window
which shows computer code for the thread.

11.   The GUI of claim 10, further comprising:
15   a first pointer which is movable through states of
execution of the computer code; and
a second pointer which is movable relative to the
computer code to indicate a portion of the computer code
executing at a state of execution.

20   12.   The GUI of claim 1, wherein the display shows
operational histories of multiple threads for use in
microengines of the processor.

13.   The GUI of claim 11, further comprising
multiple windows for showing computer code corresponding to
25   more than one of the multiple threads.

14.   The GUI of claim 2, further comprising a code
label that is displayed relative to a state of execution of

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computer code in the thread, the code label corresponding to a routine in the computer code that is executing at the state of execution.

15. The GUI of claim 14, further comprising a window for selecting code labels to be displayed.

16. The GUI of claim 2, wherein time is defined in terms of cycles of the processor.

17. A graphical user interface (GUI) comprising:
state indicators which show states of execution of threads running in microengines of a processor, the state indicators showing the states of execution as functions of clocking in the processor; and
a window showing computer code corresponding to one of the threads.

18. The GUI of claim 17, wherein the state indicators show different states of execution in different colors.

19. The GUI of claim 17, further comprising event indicators which show reference events that relate to one or more of the threads as functions of the clocking in the processor.

20. The GUI of claim 19, further comprising identifiers which identify devices to which the reference events relate.

21. The GUI of claim 17, further comprising:

a first pointer which is movable relative to one of the state indicators; and

a second pointer which is movable relative to the

5   computer code in the window to indicate a portion of the computer code executing at a state of execution.

22. The GUI of claim 17, wherein the state indicators are linear and are displayed relative to cycles of the processor.

10   23. The GUI of claim 17, wherein the window shows the computer code in read-only format.

24. The GUI of claim 23, further comprising an option to display the computer code in read/write format.

25. A computer program stored on a computer-

15   readable medium, the computer program comprising instructions that cause a computer to generate a graphical user interface (GUI), the GUI comprising:

state indicators which show states of execution of threads running in microengines of a processor, the state

20   indicators showing the states of execution as functions of clocking in the processor; and

a window showing computer code corresponding to one of the threads.

26. An apparatus for generating a graphical user

25   interface (GUI), the apparatus comprising:

a processor which executes computer instructions to generate a GUI, the GUI comprising:

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state indicators which show states of execution of threads running in microengines of a processor, the state indicators showing the states of execution as functions of clocking in the processor; and

5 a window showing computer code corresponding to one of the threads.